

CLAIMS:

1. Liquid crystal display (LCD) system, comprising means for generating a number of LCD drive voltages with values symmetrical with respect to a predetermined voltage value, said means having a configuration of buffer capacitors to provide each of the LCD drive voltages with a buffer capacitance, the LCD system further comprising an LCD driver circuit with matrix switching and control means to supply the terminals of an LCD panel with voltages corresponding to said LCD drive voltages, resulting in a proper light level of the pixels of the LCD panel, characterized in that at least one charge pump unit with at least one pump capacitor and switching elements is connected to the buffer capacitors.
2. LCD system according to claim 1, characterized in that the means for generating a number of LCD drive voltages comprises a DC/DC converter to supply an output voltage for the configuration of buffer capacitors, and that a charge pump unit is provided comprising at least one first pump capacitor and respective switches to define a first group of LCD drive voltage differences and at least one second pump capacitor and respective switches to define, in combination with the at least one first pump capacitor and respective switches, a second group of LCD drive voltage differences, the latter voltage differences being substantially equal to the LCD drive voltage differences of the first group (Fig. 6).
3. LCD system according to claim 1, characterized in that the means for generating a number of LCD drive voltages comprises a DC/DC converter to supply an output voltage for the configuration of buffer capacitors, and that a first charge pump unit is provided comprising at least one pump capacitor and respective switches to define a first group of LCD drive voltage differences, and a second charge pump unit comprising at least one pump capacitor and respective switches to define a second group of LCD drive voltage differences (Figs. 7 and 8).
4. LCD system according to claim 1, characterized in that the means for generating a number of LCD drive voltages comprises a DC/DC converter to supply an

output voltage for the configuration of buffer capacitors, and that a first charge pump unit is provided comprising at least one first pump capacitor and respective switches to define a first group of substantially equal LCD drive voltage differences and at least one second pump capacitor and respective switches to define, in combination with the at least one first pump capacitor and respective switches, the same group of substantially equal LCD drive voltages (Fig. 6).

5. LCD system according to claim 1, characterized in that the means for generating a number of LCD drive voltages comprises a DC/DC converter to supply an output voltage for the configuration of buffer capacitors, and that a first charge pump unit is provided comprising at least one first pump capacitor and respective switches to define a first group of LCD voltage differences and at least one second pump capacitor and respective switches to define, in combination with the at least one first pump capacitor and respective switches, a second group of LCD drive voltages, the latter voltage differences being substantially equal to the drive voltage differences of the first group, and a second charge pump unit comprising at least one third pump capacitor and respective switches to define an additional group of substantially equal LCD drive voltage differences (combination of Figs. 6 and 7).

6. LCD system according to claim 2, characterized in that the means for generating a number of LCD drive voltages comprises a DC/DC up-converter fed with a battery voltage so as to generate the LCD drive voltages (Figs. 5-7).

7. LCD system according to claim 2, characterized in that the means for generating a number of LCD drive voltages comprises a DC/DC down-converter fed with a battery voltage so as to generate the LCD drive voltages (Fig. 8).